

### **Remarks.**

The specification at page 3, line 8 has been amended to show that the coloring agent has either diffused or bonded with the surface of the gemstone. This insertion is fully supported by original claims 16 and 18.

The specification at page 4, line 16, has been amended to change the second occurrence of the word "color" to the word "copper" to correct a mistake in the specification. It would be obvious to one of ordinary skill in the art that the phrase, "after treating the topaz in color to impart a yellow color to the topaz," made no sense, and that the applicant intended the phrase to read, "after treating the topaz in **copper** to impart a yellow color to the topaz."

Claim 1 has been amended to include the limitation that the selected treating agent primarily includes the element copper. This limitation is supported in the specification at page 2, lines 13,-15 and page 2, line 20 through page 3 line 3, which element copper is not disclosed in any of the prior art. Claims 3 and 5 have been amended to conform to the format for dependent claims consistent with other dependent claims of the application.

Claims 6 and 7 have been amended to refer to the "element copper" of newly amended claim 1.

Claims 8 and 9 have been amended to correct typographical errors and to revise the upper temperature to 1250°C consistent with the upper temperature range specified in claim 3. Such revision is supported in the specification at page 5, lines 14-16.

Independent claim 10 has been amended to include the same limitations as independent claim 1, and are similarly supported in the specification. Claim 11 has been amended to conform to the format for dependent claims consistent with other dependent claims of the application.

Claims 12 and 13 have been amended to correct references to the proper independent claim and to revise the upper temperature to 1250°C consistent with the upper temperature range specified in claim 3 and in the specification as noted above.

Claims 14 and 15 have been amended to refer to the "element copper" of newly amended claim 10.

Claims 16-19 have been amended to remove the rejection to the claims under 35 U.S.C. §112 and to make the claims definite.

### **RESPONSE.**

#### **Examiner's Objection to claim 10.**

The Examiner has object to claim 10 asserting that the word "temp" on line 3 should be written out as "temperature." Applicant respectfully traverses such objection since in Applicant's copy of claim 10, as he believes was transmitted to the PTO, the word "temperature" is present. However, the point is moot in light of the amendment to claim 10

**Rejection of claims 1, 10, 16-19 under 35 U.S.C. § 112.**

Rejection of claims 1,10,16-19 under 35 U.S.C. § 112 is respectfully traversed to the extent such rejection applies to newly amended claims 1, 10, 16-19. Applicant has deleted the limitation "light" from claims 1 and 10, and has provided antecedent basis for "outer surface" in claim 16, and "surface" in claim 18.

**Rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by SU 1686045.**

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being clearly anticipated by SU 1686045. Applicant respectfully traverses such rejection to the extent such rejection applies to newly amended claims 1.

**Analysis of SU 1686045 (Abstract).**

The Examiner correctly states that the abstract discloses imparting coloration to sapphire jewelry stones by heating at a selected temperature and for a selected time the stones in a powdered metal oxide, such as strontium oxide to provide orange coloration. The word "copper" is nowhere stated or implied in SU 1686045.

**Rejection of claim 1.**

Claim 1 has been amended to include the limitation that the treating agent primarily includes a form of the element copper. The Examiner has acknowledged that the prior art does not teach nor suggest color enhancing a gemstone/topaz/sapphire in combination with a finely divided form of copper metal or copper oxide. Therefore, including the limitation that the primary treating agent is copper distinguishes the instant application from the teachings of SU 1686045. Applicant respectfully submits that claim 1 is now in condition for allowance.

**Rejection of claim 2.**

Claim 2 is considered to be allowable on its own merits, but in addition, claim 2 is dependent upon newly amended claim 1, which is now considered to be in condition for allowance. Since claim 1 is not considered to be anticipated, the combination of claim 1 with claim 2 cannot be anticipated.

**Rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Haynes US 3616357.**

The Examiner has rejected 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Haynes US 3616357. Applicant respectfully rejects such rejection to the extent such rejection applies to newly amended claim 1.

**Analysis of Haynes US 3616357.**

Haynes US 3616357 describes a method for changing the color of gemstones by placing the gemstones in the presence of a solid form of a radioactive material that gives off a desired type of radiation. Haynes does not describe a process for enhancing

gemstones in the presence of a finely divided form of a selected treating agent. Haynes does not describe a process wherein the treating agent primarily includes a form of the element copper.

#### Rejection of claim 1.

Claim 1 has been amended to include the limitation that the treating agent include the element copper. The Examiner has acknowledged that the prior art does not teach nor suggest color enhancing a gemstone/topaz/sapphire in combination with a finely divided form of copper metal or copper oxide. Therefore, including the limitation that the primary treating agent is copper distinguishes the instant application from the teachings of Haynes US 3616357. Applicant respectfully submits that claim 1 is now in condition for allowance.

#### Rejection of claim 2.

Claim 2 is considered to be allowable on its own merits, but in addition, claim 2 is dependent upon newly amended claim 1, which is now considered to be in condition for allowance. Since claim 1 is not considered to be anticipated, the combination of claim 1 with claim 2 cannot be anticipated.

#### **Rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Carr et al US 3897529.**

The Examiner has rejected 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Carr et al US 3897529. Applicant respectfully rejects such rejection to the extent such rejection applies to newly amended claim 1.

#### **Analysis of Carr et al US 3897529.**

Carr et al describes a process for altering the appearance of corundum crystals at elevated temperatures in the presence of titanium oxide with or without a metal oxide colorant. The elevated temperatures are in the range from about 1600° C. to about 1850° C. (col. 3, lines 64-67), and the metal oxides are iron, chromium, vanadium, and nickel, which impart color to corundum (col. 4, lines 38-40). Carr et al further teaches the asteriation of the corundum by subjecting the corundum to further heating at elevated temperatures in the range from about 1100° C. to about 1500°C. in the presence of titanium oxide (col. 4, lines 28-34). In Carr et al, the asteriation does not occur unless the previous coloration treatment does not result in sufficient asteriation. Carr et al does not describe or teach the coloration of corundum at a temperature below 1600° C. Carr et al does not describe or teach the coloration of any gemstone other than corundum. Carr et al does not describe or teach the coloration of a gemstone using a form of the element copper. One of ordinary skill in the art that the process for increasing asteriation in the corundum does not impart coloration to the corundum.

#### Rejection of claim 1.

The Examiner asserts that Carr et al teaches changing/enhancing the color of gem corundum (expressly citing sapphire, EX 2) by packing stones into a crucible of powder comprising a metal oxide colorant agent and heating for appropriate times, temperatures, and firing conditions to cause coloration, including products being red in appearance.

Applicant agrees with such assertion, however, Carr et al does not describe the coloration of a gemstone below the temperature of 1600°. Carr et al only teaches the asteriation of corundum below 1600°. Further, Carr et al is not relevant to the newly amended claim 1, which now recites the limitation that the treating agent primarily includes an element of copper. As noted above, Carr et al does not disclose, either expressly or inherently, the use of an element of copper. To the contrary, Carr et al specifically discloses the use of titanium oxide as the primary treating agent, with or without a metal oxide. The metal oxides are specifically identified as iron, chromium, vanadium, and nickel. Since the metal oxides may or may not be used, the doctrine of inherency cannot apply. Since the Examiner has acknowledged that the prior art does not teach nor suggest color enhancing a gemstone/topaz/sapphire in combination with a finely divided form of copper metal or copper oxide, Applicant considers claim 1 to be in condition for allowance.

**Rejections of Claim 3, 4 and 5 under 35 USC § 103(a) as being unpatentable over SU 1686045.**

The Examiner has rejected claims 3, 4 and 5 under 35 U.S.C. 103(a) as being unpatentable over SU 1686045. Applicant respectfully traverses such rejection. Claims 3, 4 and 5 are considered to be allowable on their own merits, however, such claims are dependent on newly amended claim 1 which is now considered to be in condition for allowance. Since claim 1 is not considered to be unpatentable over SU 1686045, the combination of claim 1 with claims 3, 4 and 5 cannot be found to be unpatentable.

**Rejections of Claim 8 and 9 under 35 USC § 103(a) as being unpatentable over SU 1686045 in view of Carr et al US 3897529.**

The Examiner has rejected claims 8-9 under 35 U.S.C. 103(a) as being unpatentable over SU 1686045 in view of Carr et al US 3897529. Applicant respectfully traverses such rejection. Claims 8 and 9 are considered to be allowable on their own merits, however, such claims are dependent on newly amended claim 1 which is now considered to be in condition for allowance. Since neither SU 1686045 or Carr et al US 3897529 teach the use of finely divided form of an element of copper as a colorant for gemstones, the combination of SU 1686045 and Carr et al cannot result in newly amended claim 1 of the instant invention, and therefore, claim 1 cannot be considered to be unpatentable over SU 1686045 in view of Carr et al US 3897529. Therefore, the combination of claim 1 with claims 8 and 9 cannot be found to be unpatentable over SU 1686045 in view of Carr et al US 3897529.

**Rejections of Claim 4, 5, 8 and 9 under 35 USC § 103(a) as being unpatentable over Carr et al US 3897529.**

The Examiner has rejected claims 8-9 under 35 U.S.C. 103(a) as being unpatentable over Carr et al US 3897529. Applicant respectfully traverses such rejection. Claims 4, 5, 8 and 9 are considered to be allowable on their own merits, however, such claims are dependent on newly amended claim 1 which is now considered to be in condition for allowance. Since claim 1 is not considered to be unpatentable over Carr et al US 3897529, the combination of claim 1 with claims 4, 5, 8 and 9 cannot be found to be unpatentable.

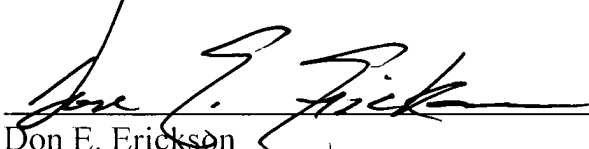
**Rejection of claims 16-19 under 35 USC §112.**

Claims 16-19 are rejected under 35 USC 112 above. Examiner has acknowledged that they distinguish over the prior art which does not teach nor suggest a color enhanced sapphire or topaz gemstone with one or more surfaces color enhanced due to copper metal or copper oxide. Therefore, applicant believes claims 16-19 are in condition for allowance.

**Conclusion.**

The claims have been amended to remove the rejections and objections under 35 U.S.C. §112. Claims 1 and 8 have been amended to include the limitation that the treating agent primarily includes a form of the element copper. The examiner acknowledges that such treating agent is not taught or suggested in the prior art. There has been no new matter introduced in the specification or the claims. Reconsideration and allowance of the claims are respectfully requested.

Respectfully submitted,

  
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